



# Interstate Oil & Gas Compact Commission

## Summary of 2020-2021 CCUS Webinars and Workshops for Regulators.

Presented by

Dr. Lanny Schoeling, PE

November 8<sup>th</sup>, 2021



# Agenda

- CCUS Presentation and Workshop 2020 & 2021
  - Key Learning from
    - ERRT Annual Meeting (June 2020) - Regulators in the Know (Lanny Schoeling, PE)
    - Fall Workshop – CO<sub>2</sub>, EOR, and Carbon Capture (Chuck Fox, PE)
- Webinar (Dec 7th, 2021) Coming Up Dec 7<sup>th</sup>, 2021
  - Time 11:00am to 12:30pm
  - Webinar Title: CCS – CO<sub>2</sub> Storage Management and Key Technical Challenges Regulators Face – “Monitoring, Modeling, Sampling & Containment
- Current CO<sub>2</sub> Sources and Infra-structure for CCUS

# ERRT Annual Meeting (June 2020) - Regulators in the Know

## Key Learning for (106 Attendees)

- Carbon Capture Components are:
  - CO2 Source
  - Facilities for Compression and Dehydration
  - Transportation
  - Sinks for CO2 (EOR oil and gas fields)
- Screening of Oil Reservoirs
  - Can use similar criteria for Saline and Gas Reservoirs
- CO2-EOR Economics
- 45Q Tax Credits
- Priorities Regulators want in Fall Workshop
  - Current Regulations (Class II and Class VI) permitting
  - 45Q Credits

# Fall Workshop – CO<sub>2</sub>, EOR, and Carbon Capture

## Key Learnings

- Reviewed the History of CO<sub>2</sub> Flooding
  - From Studies, CO<sub>2</sub> stays in the ground
  - CCUS can work economically
    - Val Verde Basin natural gas/CO<sub>2</sub> separation plants provided CO<sub>2</sub> in the 1970's
    - Dakota Gasification Plant (IGCC) supplies Canadian Floods
  - Monitoring and Testing are important in CCUS
  - CO<sub>2</sub> sources need to be close to the oilfield sinks for good CCUS economics.
  - Oil prices and carbon credits are the largest variables for CCUS economics

# Monitoring and Testing

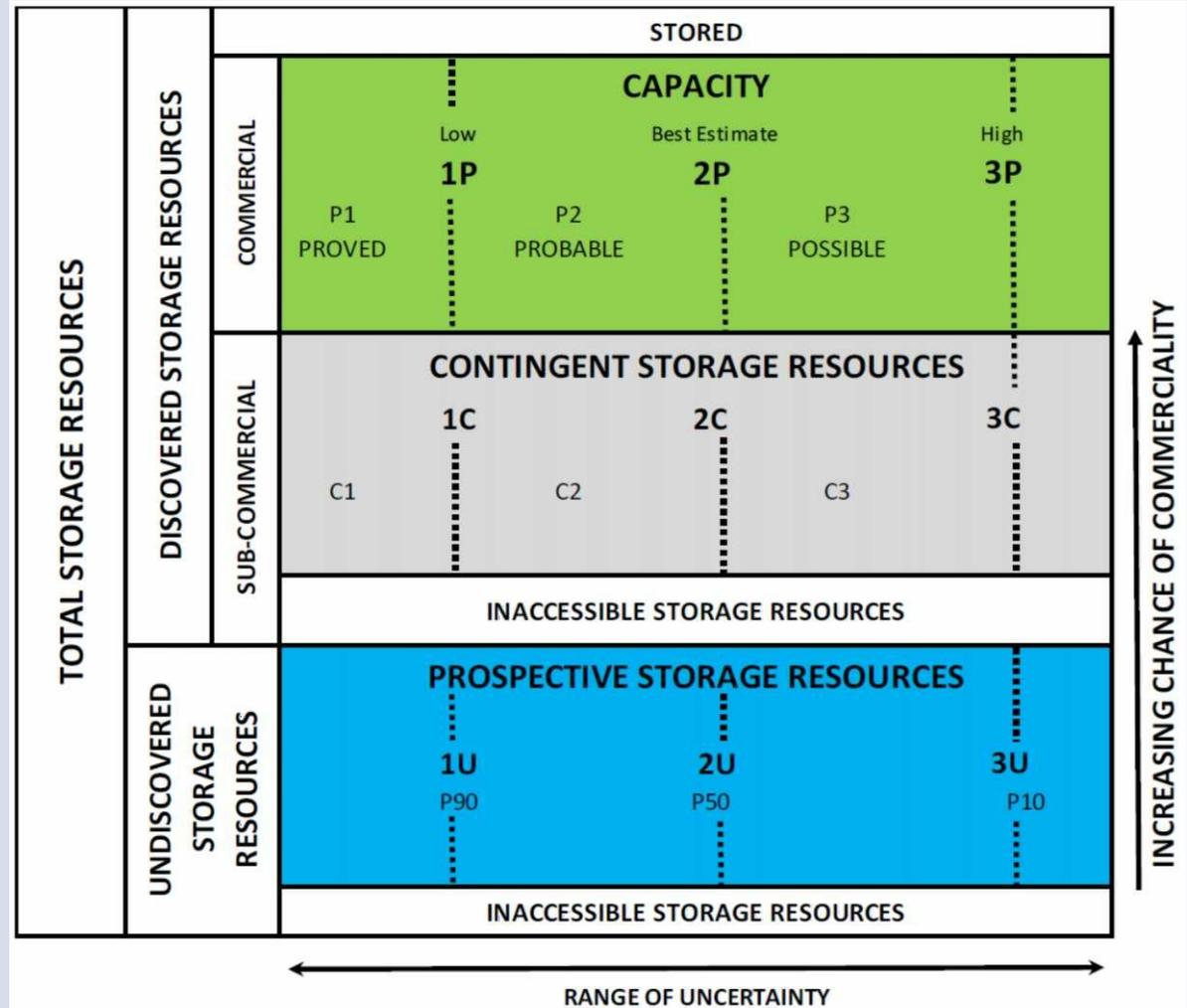
- Mechanical Integrity Testing (MIT)
  - Internal (pressure test of the casing, tubing, and packer)
  - External (looking for flow in channels adjacent the wellbore
    - Temperature and noise logs
- Operational Testing
  - CO<sub>2</sub> stream composition
  - Injection rate, volume and pressure
  - Corrosion monitoring (coupons & casing inspection logs)
  - Pressure fall-off (at least every 5 years)
- Ground water quality and geochemistry
  - Monitoring wells in the 1<sup>st</sup> permeable formation above the confining zone
- Plume and pressure front
  - Time lapse seismic surveys (likely choice)
  - Pressure monitoring wells in the injection zone
- Surface air and soil gas (maybe)

# Future Webinar #3

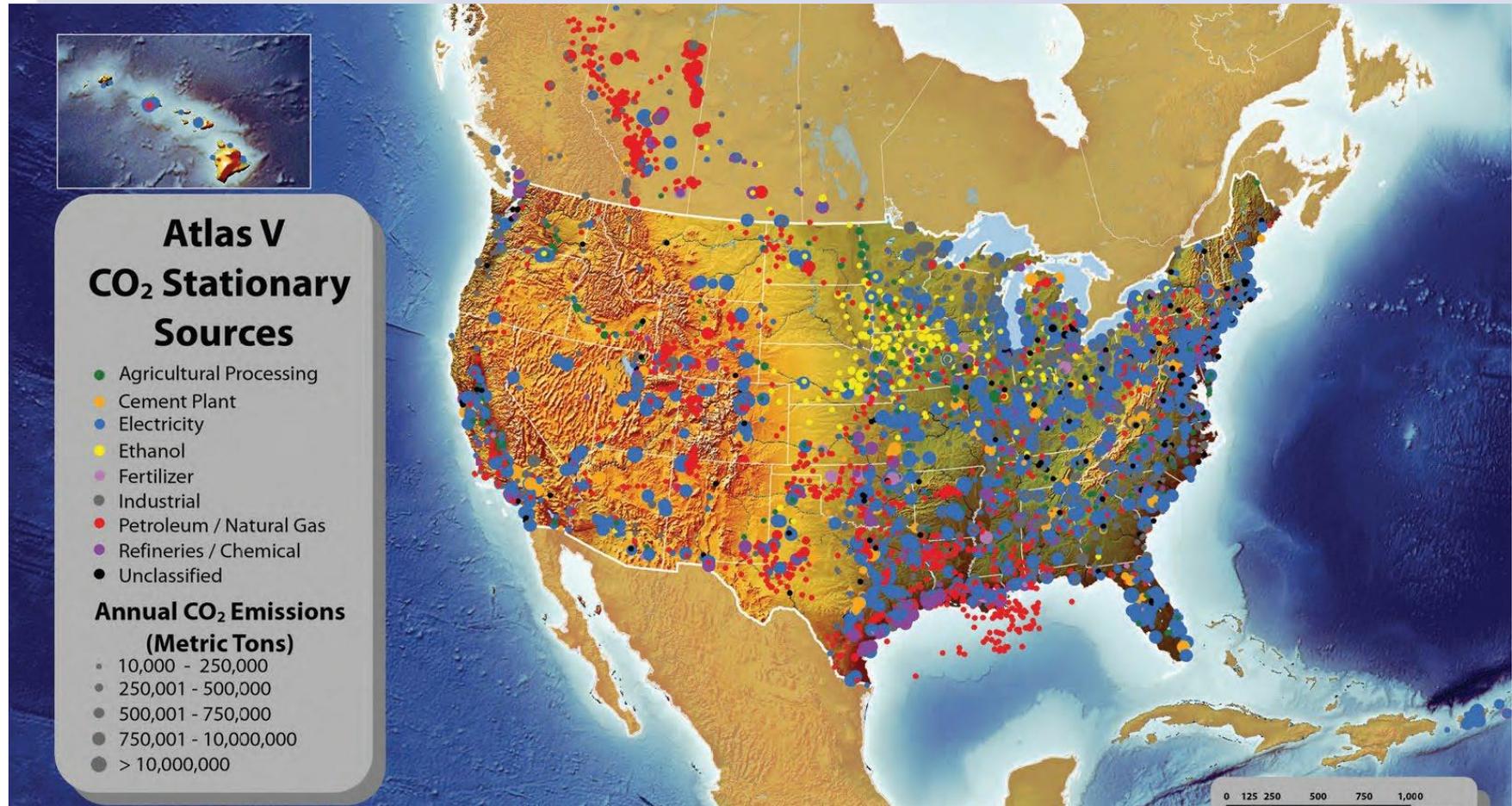
- Webinar Title: CCS – CO2 Storage Management and Key Technical Challenges Regulators Face – “Monitoring, Modeling, Sampling & Containment”
- **December 7<sup>th</sup>, 2021 Time 11am to 12:30pm**
- Speakers:
  - Dr. Scott Frailey PE - Illinois Geological Survey
    - Title – SPE’s SRMS Framework (Storage Resource Management System)
  - Dr. Susan Hovorka - Bureau of Economic Geology
    - Title - Key Technical Challenges Regulators Face – Monitoring, Modeling, Sampling & Containment
- Panel Session
  - Speakers with Leslie Savage with the Railroad Commission of Texas
- Moderator – Lanny Schoeling, PE

# SRMS

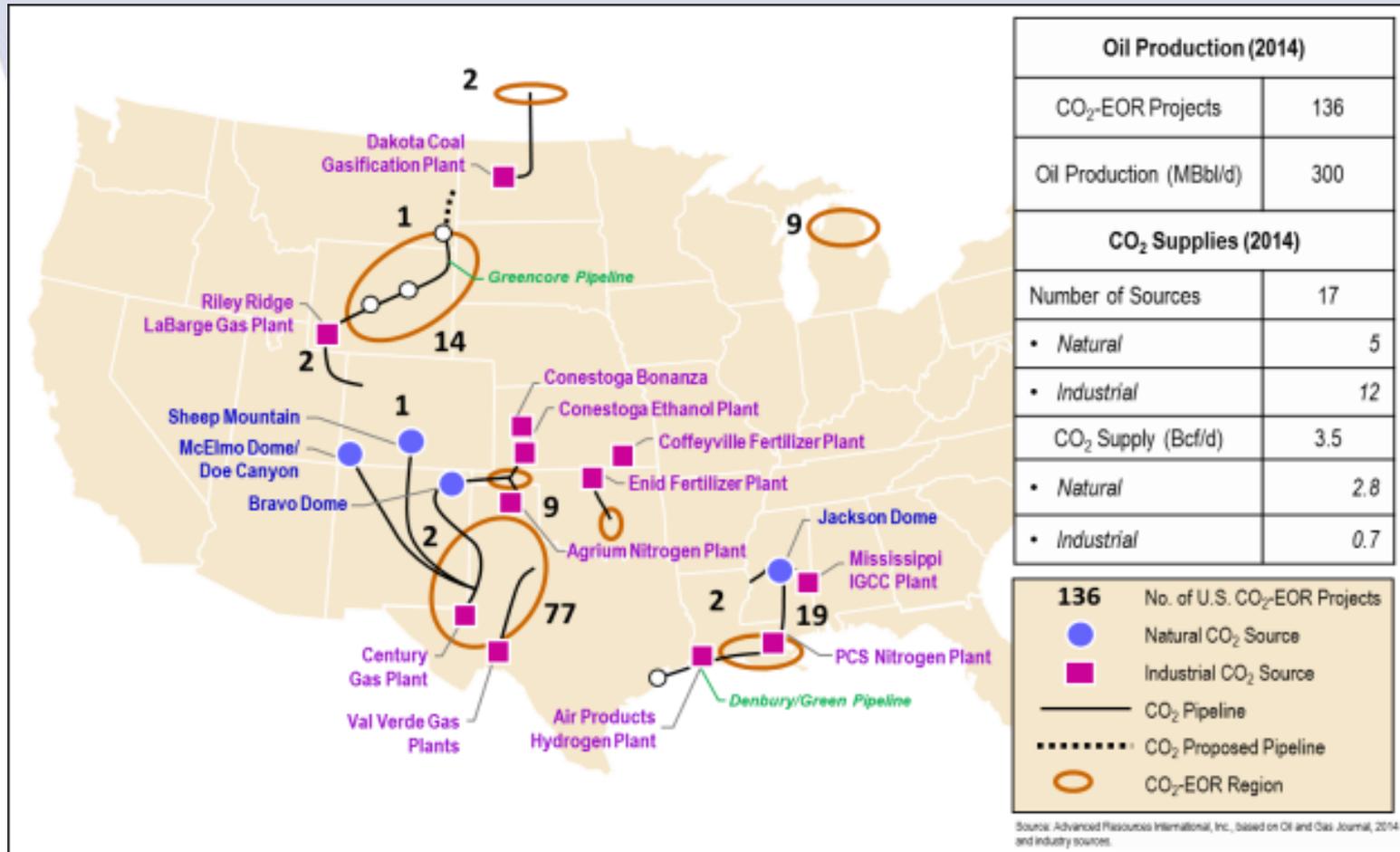
- Major Categorizations
  - Low estimate
    - High probability
    - P90
  - Best Estimate
    - Most-likely
    - P50
  - High Estimate
    - Low probability
    - P10



# CO<sub>2</sub> Sources



# CO<sub>2</sub>-EOR Projects and Infra-Structure



Q & A